

REMARKS

The Examiner's indication of allowance of claims 3, 4, and 13-20 has been noted. By the above actions, claims 1, 5, 6, & 10 have been amended. As a result of the above actions, further consideration of this application is hereby requested.

Claim 10 was rejected under 35 U.S.C. § 112 as being indefinite. However, with the rewording of claim 10 set forth above, this meaning of this claim is now clear and definite. Thus, withdrawal of this rejection is in order and is now requested. Inasmuch as claim 10 was not rejected on the basis of prior art and was previously indicated as containing allowable subject matter, with the elimination of the indefiniteness, claim 10 should now be in condition for allowance.

Claims 1, 6, 9 and 11-12 were rejected under 35 U.S.C. § 103 as being unpatentable over the combined teachings of the patents to Harley and Hower. This rejection is inappropriate, at least to the extent that it relates to currently amended claim 1.

That is, while the Examiner acknowledges that that Harley lacks a pre-emphasis filter, she indicates that such is considered to be well known, citing Hower in support of her position. However, amended claim 1 calls for the pre-emphasis filter to amplify frequencies *throughout* the range of about 20 Hz to about 3,000 Hz. Hower, on the other hand, teaches limiting amplification to "desired low frequencies in the 25 to 150-200Hz range" or "[a]lternatively ... from 410Hz to 600Hz range." Thus, Hower teaches limiting of amplification to about an octave in a low frequency range and provides no suggestion or reason for providing a pre-emphasis filter which would amplify frequencies throughout a range that extends well above the frequencies he teaches up to about 3,000 Hz.

This difference is significant because the present invention, unlike that of Hower, is a *digital* stethoscope, and compensation for the attenuation by the fatty tissue cannot be performed digitally because, if the signal level is too small, the representation of the digital domain occurs with very few active bits so that so-called

quantization noise will appear in the signal. Hower simply cannot suggest a solution to a problem that is not relevant in the context of his invention.

As for claim 6, it appears that the Examiner has misunderstood the content of the portion of the Harley text that has been referenced relative to this claim. What Harley describes at column 7, lines 5-27 is a way to obtain a digital filter that will create anti-noise and does not describe emulation of the transfer function of a *specific* stethoscope. Furthermore, as now amended, the specific stethoscope emulated is an *acoustic* stethoscope, an *acoustic* stethoscope not being a stethoscope that produces an acoustic output, but rather being one in which sound is acoustically transmitted to the user, i.e., via a sound conduit without amplification as contrasted with one in which the sound is electronically processed and transmitted.

With respect to claim 11, the Examiner's indication that Harley's transducers are proximate the ear canal is incorrect and make no sense in context because locating of the transducers proximate the ear canal would be counterproductive to use of the microphone 14 in the ear cup for noise removal.

Therefore, for the reasons stated, the rejection under § 103 based on the combined teachings of the Harley and Hower patents should be withdrawn and such action is hereby requested.

Claim 5 has been rejected under 35 U.S.C. § 103 as being unpatentable over the Harley patent when viewed in combination with the patents to Dicken et al. and Greenberger. However, this rejection is inappropriate, particularly insofar as it relates to claim 5 as now present and which recites the fact that the digital filter means has:

multiple sets of coefficients for producing multiple impulse transfer functions corresponding to multiple acoustic stethoscope types are stored in conjunction with the digital filter.

Firstly, the shortcomings of the Harley patent that have been mentioned above relative to the rejection of claim 6. Furthermore, the Examiner has acknowledged that "Harley fails to disclose a pre-emphasis filter means and multiple impulse transfer functions corresponding to multiple types of stethoscopes," and while the Examiner asserts that such are well known in the art, she has failed to provide factual evidence to support

her view, the citation of Dicken and Greenberger notwithstanding. That is, the Diecken et al. disclosure is totally at odds with the claimed invention in that, as set forth in claim 5, applicants' pre-emphasis filter is "for emphasizing high frequencies" while the filter of Diecken et al. referred to by the Examiner with reference to column 7, lines 4-20 is expressly stated as being a "high frequency cut off filter 66, which is set to roll off at approximately 600 Hz" as shown in Figs. 7a & 7b so that it cannot be used for nor suggest a pre-emphasis filter is "for emphasizing high frequencies" (which extend up to about 3,000 Hz in accordance with the present invention) when this patent teaches eliminating them rather than emphasizing them.

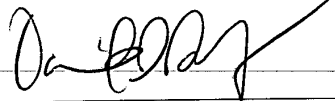
As for the Greenberger patent, relative to which the Examiner has cited its disclosures at column 5, lines 55-67 and column 6, lines 1-8, in regard to applicants' above-quoted recitation concerning the storing of multiple sets of coefficients for producing multiple impulse transfer functions corresponding to multiple acoustic stethoscope types, it is pointed out that nowhere in this patent is there any disclosure, hint or suggestion relative to either concept of emulating multiple acoustic stethoscope types or use of transfer functions for other than noise cancellation purposes. The portions of the Greenberger patent referred to by the Examiner merely describe the ability to use a series of different chest pieces for his stethoscope and it is clear from the descriptions, particularly those for the chest piece embodiments of Figs. 10A-10D, that exchanging of chest pieces is not intended to do anything other than change the noise cancellation characteristics of the Greenberger stethoscope and has no relationship to the present applicant's use of a series of stored transfer function coefficients for the purpose of allowing the device to emulate a multiplicity of different acoustic stethoscopes with a single digital stethoscope.

Plainly, no possible combination of the teachings of these three patents could lead even the most skilled artisan, let alone one of ordinary skill in the art, to the invention defined by claim 5. Therefore, this rejection should also be withdrawn.

While the present application is now believed to be in condition for allowance, should the Examiner find some issue to remain unresolved, or should any new issues

arise, which could be eliminated through discussions with applicant's representative, then the Examiner is invited to contact the undersigned by telephone in order that the further prosecution of this application can thereby be expedited.

Respectfully submitted,



---

David S. Safran  
Reg. No. 27,997

NIXON PEABODY LLP  
Suite 900  
401 9<sup>th</sup> Street, N.W.  
Washington D.C. 2004

Telephone: (703) 827-8094